AUTOLOGOUS HEMATOPOIETIC STEM CELLS TRANSPLANTATION FOR SEVERE REFRACTORY SLE WITH LUPUS NEPHRITIS: REMOTE OUTCOME WITH ALLOGENEIC KIDNEY TRANSPLANTATION

A. Demin, O. Petrova, O. Kotova, L. Demina (larisa.de@yandex.ru)
Internal Medicine Department, Novosibirsk State Medical University,
Nephrology and Dialysis City Centre, Novosibirsk, Russian Federation

OBJECTIVES

Systemic lupus erythematosus is a severe autoimmune disease that affects multiple organ systems. Lupus nephritis is a common part of the disease associated with pure prognosis. Patients with lupus nephritis who experience persisted disease activity despite conventional immunosuppression are at high risk of early death. Re-setting of the immune system and self-tolerance by high-dose immunosuppressive therapy with autologous stem cell transplantation (ASCT) is a new approach in the treatment of refractory SLE. Remote outcomes of this method and effectiveness relapse treatment are still unclear and were the aims of this study.

METHODS

We report a 33-years woman with refractory severe lupus nephritis (fig.1). The disease start is summarized in table 1.
Standard therapy was ineffective, SLEDAI score remains 22, so patient was underwent high dose immunosuppressive therapy (table 2) with ASCT and included in European Group for Blood and Marrow Transplantation European League against Rheumatism (EBMT/EULAR) registry on 53 pts who received ASCT for SLE between 1996 and 2005. Ethical approval was obtained for this study from Cambridge University Hospital ethics committee.

Tabl 1. The disease start

SLE criteria	➢proteinuria ➢hematuria ➢malar rash ➢arthritis ➢ANA positivity ➢anti-dsDNA positivity
SLEDAI score	23
Lupus nephritis morph. class	IV-G (A) (ISN/RPS, 2003)
Start therapy	➢Pred 1 mg/kg daily ➢Cyclo- 1000 mg once a month during 1 year

Tabl 2. Hematopoietic stem cell procurement

Autologous hemat. stem cells source	peripheral blood
Mobilisation regimen	Cyclo- 4 g/m^2 and granulocyte colony-stim factor at 10mg/kg subcutaneous daily
Stem cells dose	20.8*10^6 CD 34+ cells/kg body weight
Manipulations with harvest	none
Conditionin regimen	Cyclo- 120 mg/kg
Antithimocyte globulin	none

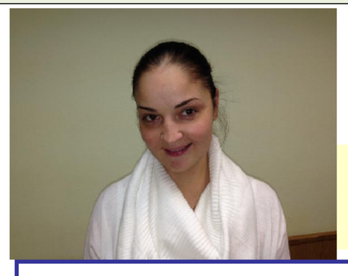

Fig. 3. Pt now - 2 yrs after kidney transplantation.

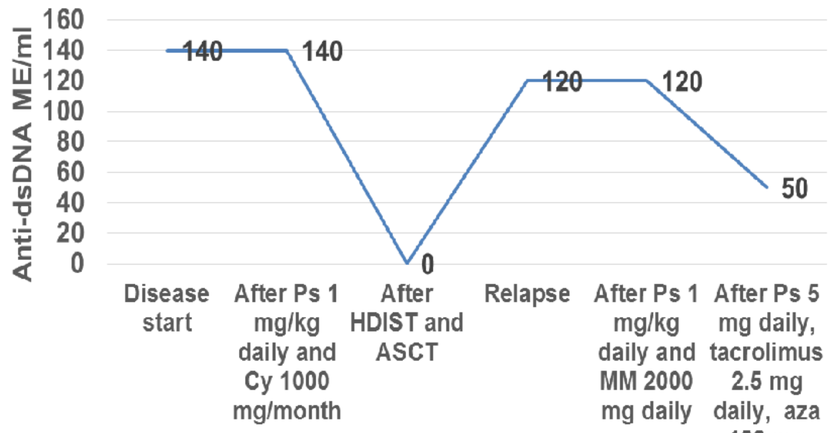

Figure 2. Anti dsDNA change (ELISA)
Ps – prednisolone, Cy – cyclophosphamide, MM - mycophenolate mofetil, aza - azathioprine

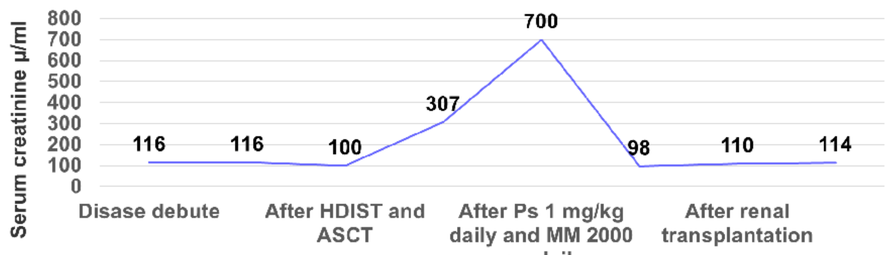

Figure 3. Serum creatinine change
Ps – prednisolone, Cy – cyclophosphamide, MM - mycophenolate mofeti l, aza - azathioprine

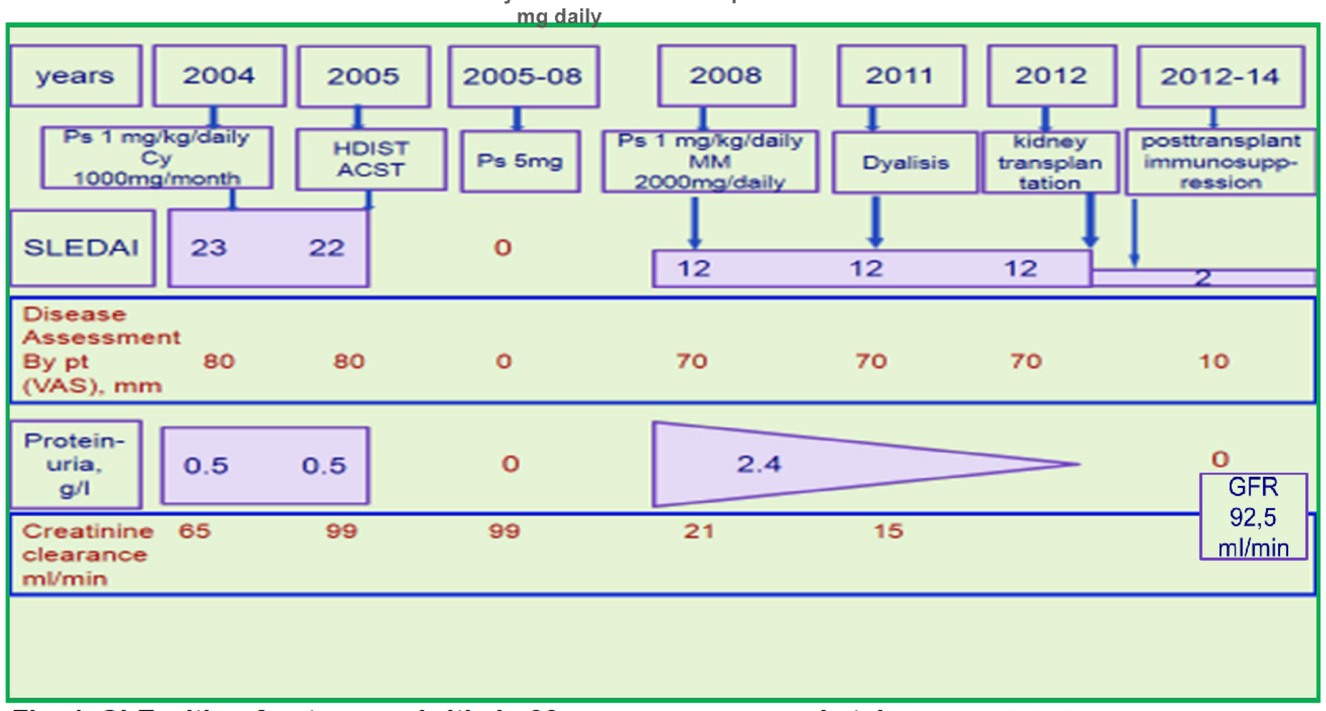

Fig. 1. SLE with refractory nephritis in 33-years woman – a sketch. Ps – prednisolone, Cy – cyclophosphamide, MM - mycophenolate mofetil, aza – azathioprine, GFR – glomerular filtration rate

RESULTS

The ASCT induced complete clinical and serological remission (SLEDAI score was 0) for 3 years.

Than relapse with nephritic syndrome and anti-dsDNA positivity occurred and caused renal failure, creatinine clearance decreased to 21. Despite therapy, including prednisolone, 45 mg daily, and mycophenolate mofetil, 2000 mg daily, disease activity persisted, creatinine clearance remained decreasing and 3 years later became 15 ml/min.

During 1 year patient was on regular hemodialysis, then renal transplantation performed.

Now, follow up is 9 years after ASCT and 2 years after kidney transplantation. Patient received a standard post-transplant immunosuppression with prednisolone, 5 mg daily, tacrolimus, 2.5 mg daily, and azathioprine, 100 mg daily, and her conditions remains stable, she has functioning renal allograft, SLEDAI score is 2 (anti-dsDNA positivity in low titer) (tab. 1, 2, fig.1, 2, 3).

CONCLUSIONS

We present the first case of immunoablation and successful double transplantation of autologous stem cells and allogeneic kidney in severe refractory to conventional immunosuppression SLE with lupus nephritis.

REFERENCES:

1. Alchi B., Yane D. Labopin M., Demin A. et al. Autologous haemoto-poietic stem cell transplantation for SLE: data from European Group for Blood and Marrow Transplantation registry. Lupus 2013; 3: 245-53.
2. Marmont H. Champ A.M. Hematopoietic stem cell transplantation for SLE. Clin Dev Immunol. 2012; 2012: 380391.
3. Lisukov I., Sizikova S., Kulagin A., Demin A. et al. High-dose immuno-suppression with autologous stem cell transplantation in severe refractory SLE. Lupus 2004; 13: 89-94.

51ERA-EDTA
347--MP
K) Clinical Nephrology, primary and secondary glomerulonephritis.
Aleksandr DEMIN
DOI: 10.3252/pso.eu.51era.2014
Poster presented at: